Name: _____ Date: _____

Polynomial Factoring EXAM (version 681)

1. **The quadratic formula says if $ax^2 + bx + c = 0$ then $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. Use the quadratic formula to solve the following equation.**

   $$x^2 + 10x + 39 = 0$$

   Simplify your answer(s) as much as possible.

2. **Express the product of $9 + 3i$ and $2 + 5i$ in standard form ($a + bi$).**

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3. **Write function $f(x) = x^3 + 8x^2 + 19x + 12$ in factored form. I'll give you a hint: one factor is $(x + 4)$.**

4. **Polynomial p is defined below in factored form.**

$$p(x) \;=\; -(x+4)\cdot(x-1)\cdot(x-5)^2$$

Sketch a graph of polynomial $y = p(x)$.